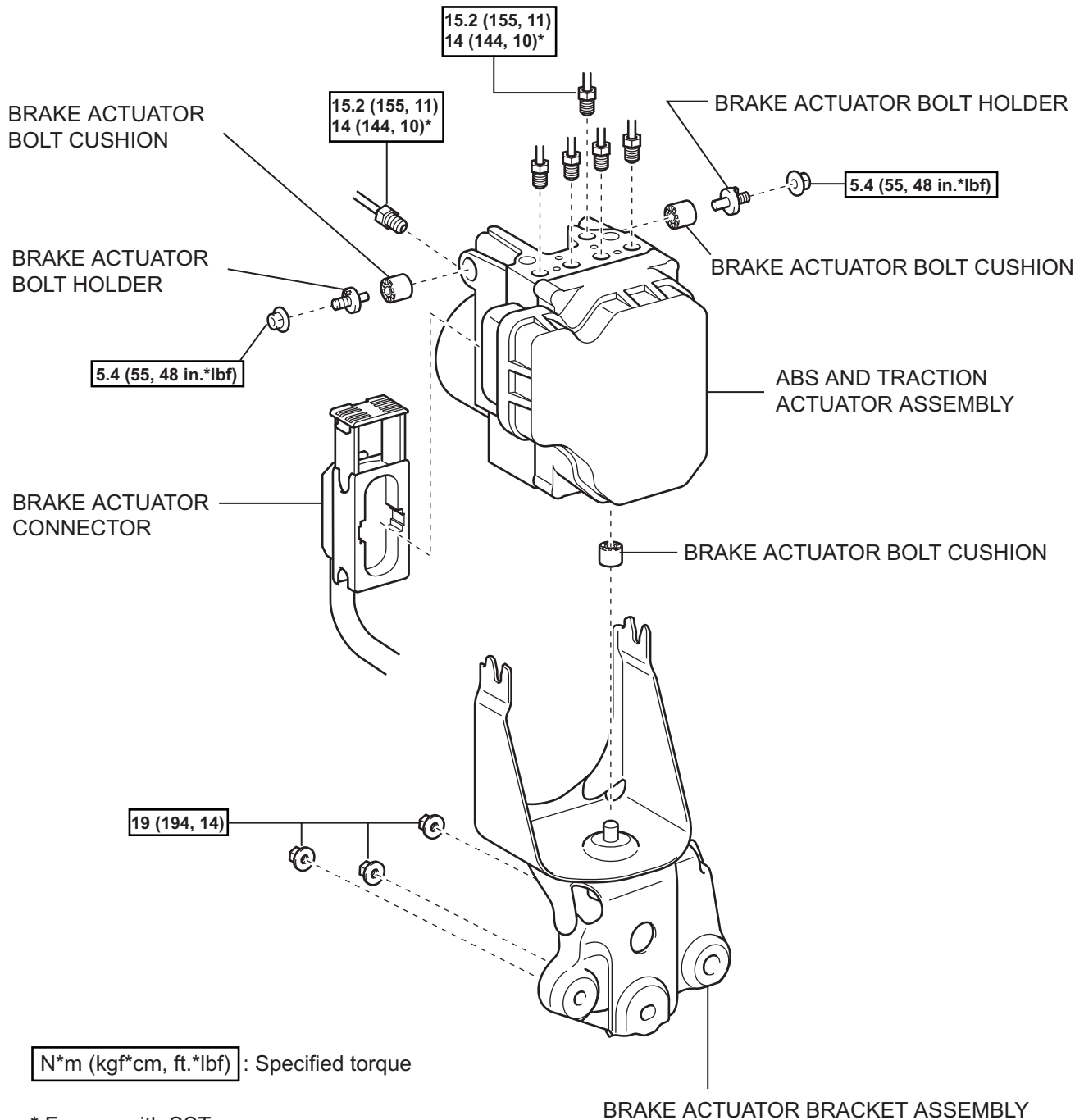
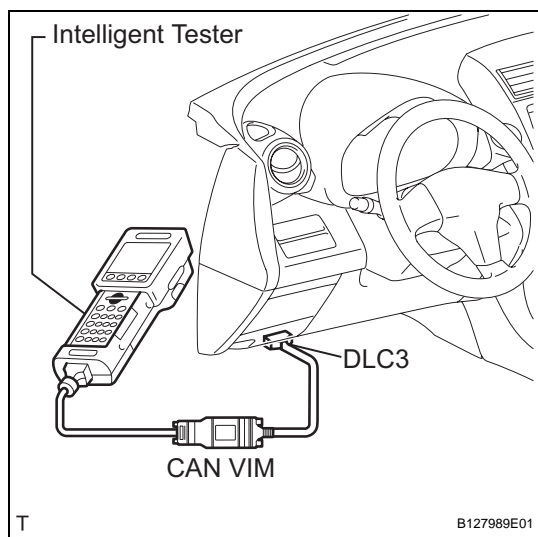


ABS AND TRACTION ACTUATOR COMPONENTS



BC

H



ON-VEHICLE INSPECTION

1. CONNECT INTELLIGENT TESTER

- Connect the intelligent tester to the DLC3.
- Start the engine and idle it.
- Select the Active Test mode on the intelligent tester.

HINT:

Please refer to the intelligent tester operator's manual for further details.

2. CHECK ACTUATOR MOTOR OPERATION

NOTICE:

Do not keep a motor relay ON for more than 5 seconds. When operating it consecutively, wait 20 seconds between each operation.

- Turn the motor relay ON and check the actuator motor operation noise.
- Turn the motor relay OFF.
- Fully depress the brake pedal and hold it for approximately 15 seconds. Check that the pedal's initial depth is maintained for the entire 15 seconds.
- Turn the motor relay ON and check that the pedal does not pulsate.
- Turn the motor relay OFF and release the pedal.

3. CHECK BRAKE ACTUATOR SOLENOID (for Front Right Wheel)

NOTICE:

- Be sure to follow the procedures below when turning ON a solenoid.
- Do not keep a solenoid ON for more than 10 seconds. When operating it consecutively, wait 20 seconds between each operation.
- Do not keep a motor relay ON for more than 5 seconds. When operating it consecutively, wait 20 seconds between each operation.

- With the pedal depressed as much as possible, perform the following operations.
 - Turn the SFRH and SFRR solenoids ON simultaneously, and check that the pedal cannot be depressed further.
 - Turn the SFRH and SFRR solenoids OFF simultaneously, and check that the pedal can be depressed further.
 - Turn the motor relay ON. Check that the pedal returns to the "depressed as much as possible" position.
- Turn the motor relay OFF and release the pedal.

4. CHECK BRAKE ACTUATOR SOLENOID (for Front Left Wheel)

- Use the same procedures described for the front right wheel to check the solenoids of the front left wheel.

HINT:

Front left wheel: SFLH, SFLR

5. **CHECK BRAKE ACTUATOR SOLENOID (for Rear Right Wheel)**
 - (a) Use the same procedures described for the front right wheel to check the solenoids of the rear right wheel.
HINT:
Rear right wheel: SRRH, SRRR
6. **CHECK BRAKE ACTUATOR SOLENOID (for Rear Left Wheel)**
 - (a) Use the same procedures described for the front right wheel to check the solenoids of the rear left wheel.
HINT:
Rear left wheel: SRLH, SRLR
7. **CHECK AND CLEAR DTC**
 - (a) Check and clear the DTC (see page [BC-47](#)).

REMOVAL

(2005/11-2006/01)

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. REMOVE AIR CLEANER CASE SUB-ASSEMBLY

- (a) Remove the air cleaner case (see page [EM-98](#)).

HINT:

Refer to the procedures from the removal of the purge VSV up until the removal of the air cleaner case.

3. DRAIN BRAKE FLUID

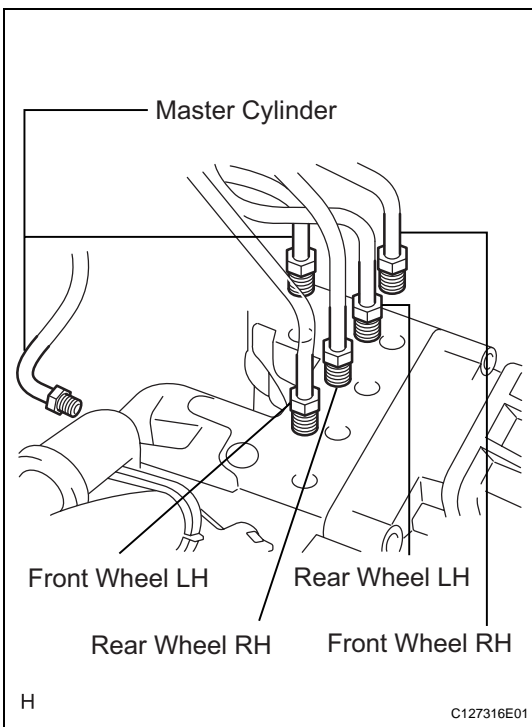
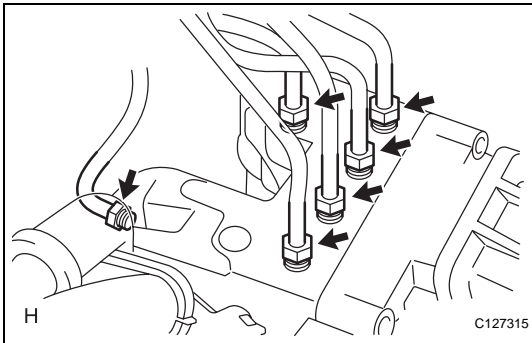
NOTICE:

Wash off brake fluid immediately if it comes in contact with any painted surface.

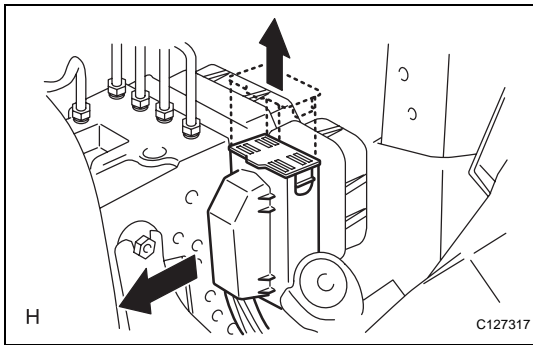
4. DISCONNECT BRAKE LINES

- (a) Using SST, disconnect the 6 brake lines from the actuator.

SST 09023-00101

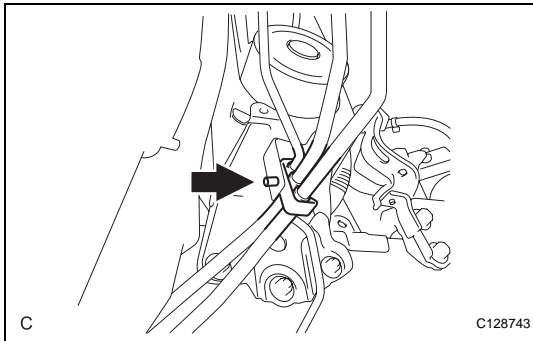


- (b) Place tags or marks to identify the installation locations of each brake line.

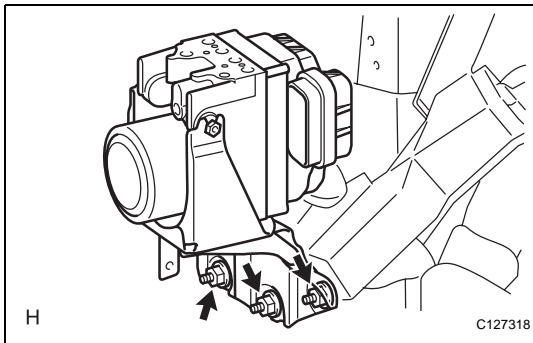


5. REMOVE ABS AND TRACTION ACTUATOR ASSEMBLY WITH BRACKET

- (a) Pull the lock lever upward and disconnect the connector.



- (b) Disconnect the brake tube clamp from the bracket.



- (c) Remove the 3 nuts and actuator with bracket.

NOTICE:

Be careful not to damage the brake tubes.

REMOVAL

(2006/01-)

1. DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL

CAUTION:

Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.

2. REMOVE AIR CLEANER CASE SUB-ASSEMBLY (for 2AZ-FE)

- (a) Remove the air cleaner case (see page [EM-98](#)).

HINT:

Refer to the procedures from the removal of the purge VSV up until the removal of the air cleaner case.

3. REMOVE AIR CLEANER CASE (for 2GR-FE)

- (a) Remove the air cleaner case (see page [EM-21](#)).

HINT:

Refer to the procedures from the removal of the air cleaner cap sub-assembly up until the removal of the air cleaner case.

4. DRAIN BRAKE FLUID

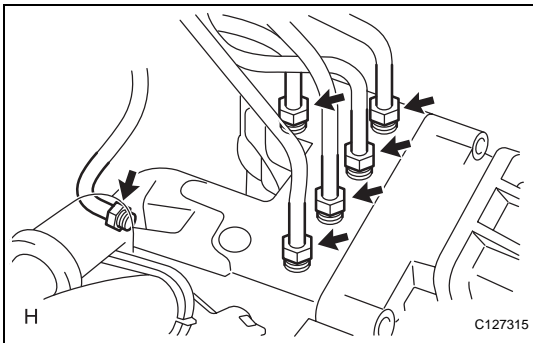
NOTICE:

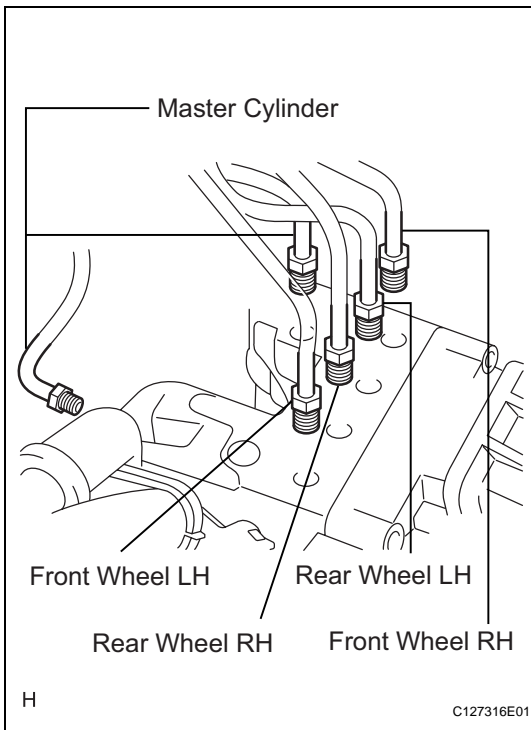
Wash off brake fluid immediately if it comes in contact with any painted surface.

5. DISCONNECT BRAKE LINES

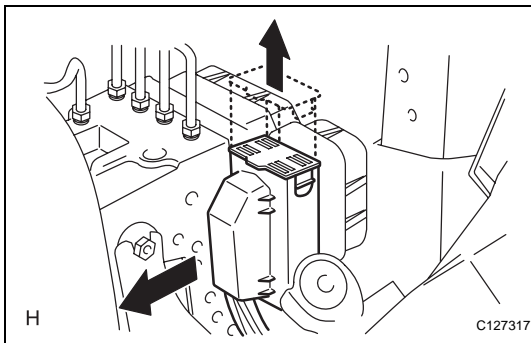
- (a) Using SST, disconnect the 6 brake lines from the actuator.

SST 09023-00101



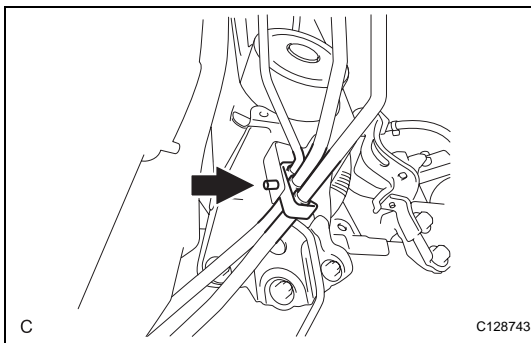


- (b) Place tags or marks to identify the installation locations of each brake line.

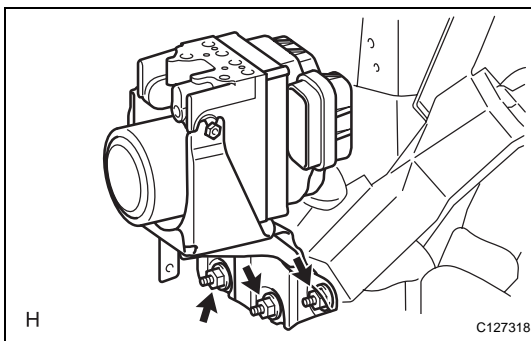


6. REMOVE ABS AND TRACTION ACTUATOR ASSEMBLY WITH BRACKET

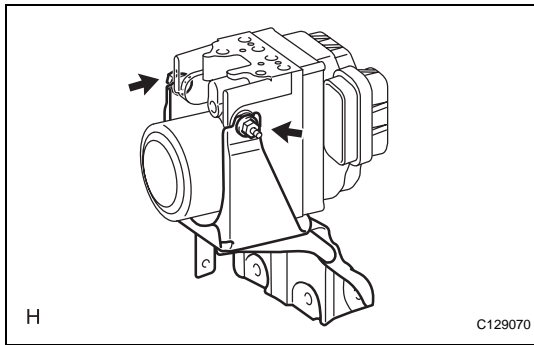
- (a) Pull the lock lever upward and disconnect the connector.



- (b) Disconnect the brake tube clamp from the bracket.



- (c) Remove the 3 nuts and actuator with bracket.
NOTICE:
 Be careful not to damage the brake tubes.



DISASSEMBLY

1. **REMOVE ABS AND TRACTION ACTUATOR ASSEMBLY**
 - (a) Remove the 2 nuts and actuator from the bracket.
2. **REMOVE BRAKE ACTUATOR BOLT HOLDER**
 - (a) Remove the 2 bolt holders from the actuator.
3. **REMOVE BRAKE ACTUATOR BOLT CUSHION**
 - (a) Remove the 3 cushions from the actuator.

REASSEMBLY

1. INSTALL BRAKE ACTUATOR BOLT CUSHION

- (a) Install the 3 cushions to the actuator.

2. INSTALL BRAKE ACTUATOR BOLT HOLDER

- (a) Install the 2 bolt holders to the actuator.

3. INSTALL ABS AND TRACTION ACTUATOR ASSEMBLY

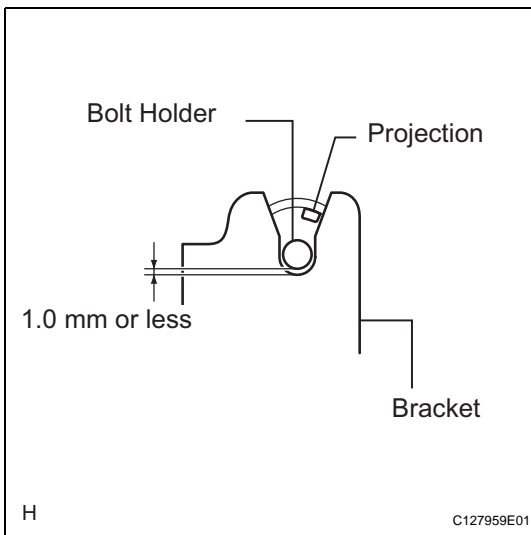
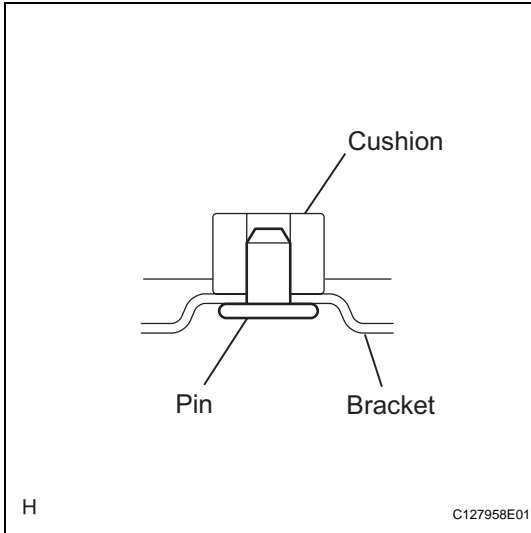
NOTICE:

Do not remove the hole plug before connecting the brake tube. New actuators are filled with brake fluid.

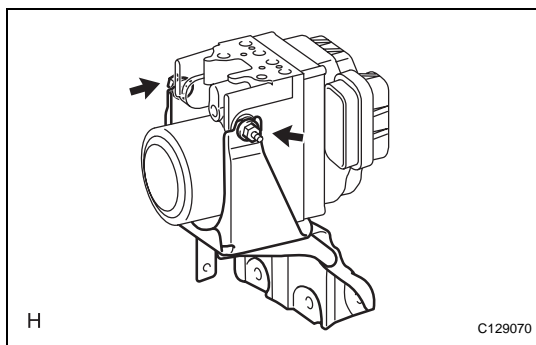
- (a) Set the actuator on the bracket.

NOTICE:

- Insert the cushion to the pin of the bracket securely.



- The clearance between the bolt holder and bracket is less than 1.0 mm (0.039 in.).
- The projection should be set as shown in the illustration.



- (b) Install the 2 nuts to assemble the actuator and bracket.

Torque: 5.4 N*m (55 kgf*cm, 48 in.*lbf)

INSTALLATION

(2005/11-2006/01)

1. INSTALL ABS AND TRACTION ACTUATOR ASSEMBLY WITH BRACKET

NOTICE:

Do not remove the hole plug before connecting the brake tube. New actuators are filled with brake fluid.

- (a) Install the actuator with bracket with the 3 nuts.

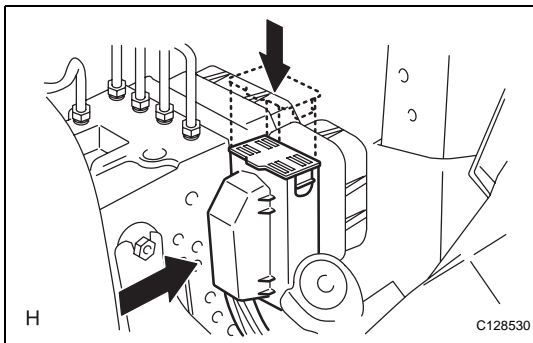
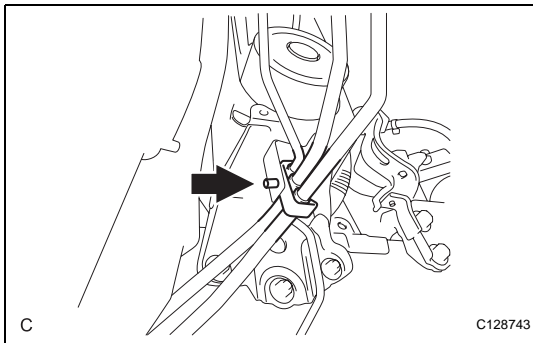
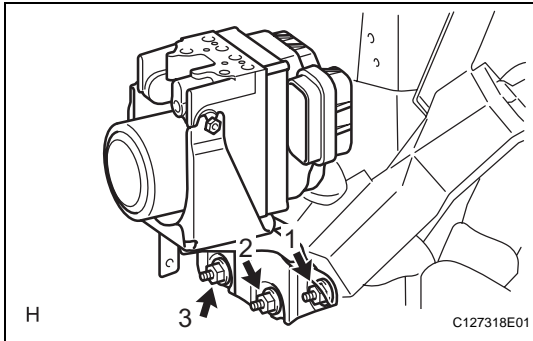
Torque: 19 N*m (194 kgf*cm, 14 ft.*lbf)

HINT:

The nuts should be tightened in order from 1 to 3 as shown in the illustration.

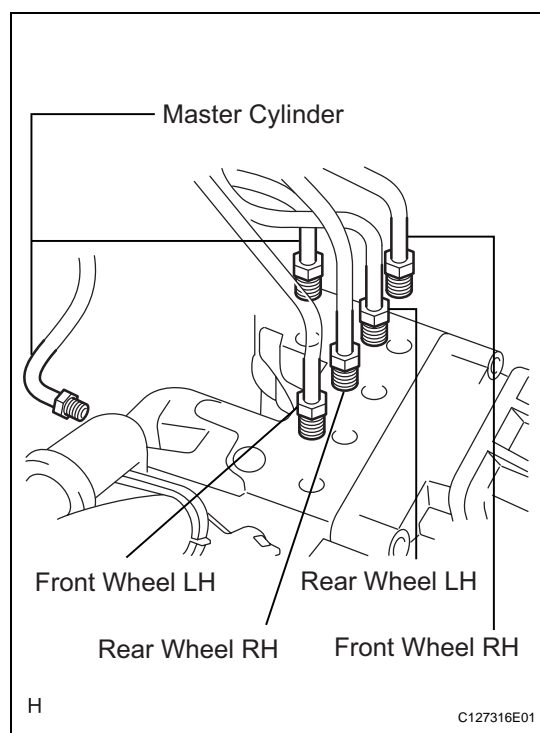
NOTICE:

Be careful not to damage the brake tubes.



- (b) Connect the brake tube clamp to the bracket.

- (c) Connect the connector and push the lock lever downward.



2. CONNECT BRAKE LINES

- (a) Using SST, connect the 6 brake lines to the correct locations on the actuator, as shown in the illustration.

SST 09023-00101

Torque: 15.2 N*m (155 kgf*cm, 11 ft.*lbf) without SST

14 N*m (144 kgf*cm, 10 ft.*lbf) with SST

HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).

3. FILL RESERVOIR WITH BRAKE FLUID (See page [BR-6](#))

4. BLEED AIR FROM BRAKE MASTER CYLINDER (See page [BR-7](#))

5. BLEED AIR FROM BRAKE LINE (See page [BR-7](#))

6. BLEED AIR FROM ABS AND TRACTION ACTUATOR ASSEMBLY (See page [BR-8](#))

7. CHECK BRAKE FLUID LEVEL IN RESERVOIR (See page [BR-6](#))

8. CHECK FOR BRAKE FLUID LEAKAGE

9. INSTALL AIR CLEANER CASE SUB-ASSEMBLY

- (a) Install the air cleaner case (see page [EM-105](#)).

HINT:

Refer to the procedures from the installation of the air cleaner case up until the installation of the purge VSV.

10. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

11. CHECK ABS AND TRACTION ACTUATOR ASSEMBLY WITH INTELLIGENT TESTER

- (a) Check the ABS and traction actuator with the intelligent tester (see page [BC-180](#)).

INSTALLATION

(2006/01-)

1. INSTALL ABS AND TRACTION ACTUATOR ASSEMBLY WITH BRACKET

NOTICE:

Do not remove the hole plug before connecting the brake tube. New actuators are filled with brake fluid.

- (a) Install the actuator with bracket with the 3 nuts.

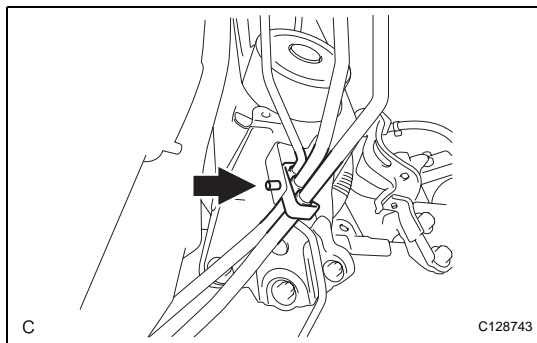
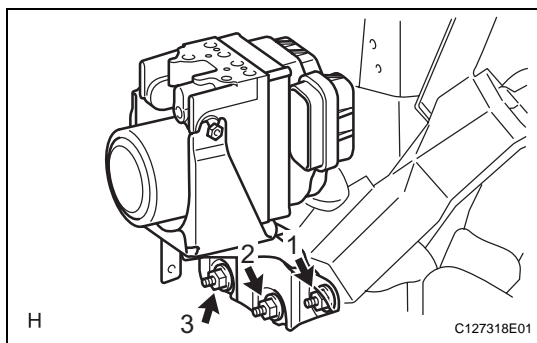
Torque: 19 N*m (194 kgf*cm, 14 ft.*lbf)

HINT:

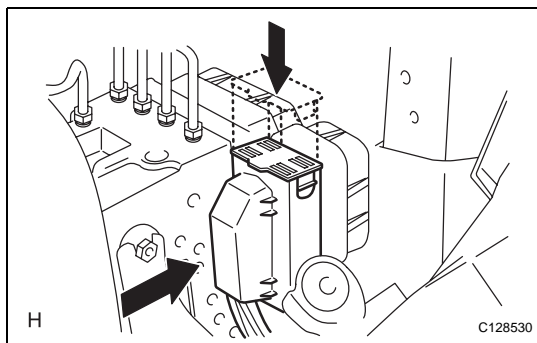
The nuts should be tightened in order from 1 to 3 as shown in the illustration.

NOTICE:

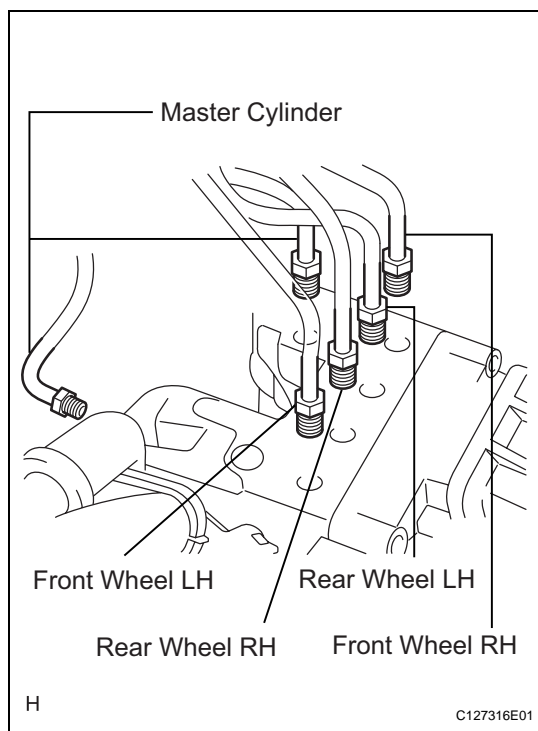
Be careful not to damage the brake tubes.



- (b) Connect the brake tube clamp to the bracket.



- (c) Connect the connector and push the lock lever downward.



2. CONNECT BRAKE LINES

- (a) Using SST, connect the 6 brake lines to the correct locations on the actuator, as shown in the illustration.

SST 09023-00101

Torque: 15.2 N*m (155 kgf*cm, 11 ft.*lbf) without SST

14 N*m (144 kgf*cm, 10 ft.*lbf) with SST

HINT:

Use a torque wrench with a fulcrum length of 30 cm (11.81 in.).

3. FILL RESERVOIR WITH BRAKE FLUID (See page [BR-6](#))

4. BLEED AIR FROM BRAKE MASTER CYLINDER (See page [BR-7](#))

5. BLEED AIR FROM BRAKE LINE (See page [BR-7](#))

6. BLEED AIR FROM ABS AND TRACTION ACTUATOR ASSEMBLY (See page [BR-8](#))

7. CHECK BRAKE FLUID LEVEL IN RESERVOIR (See page [BR-6](#))

8. CHECK FOR BRAKE FLUID LEAKAGE

9. INSTALL AIR CLEANER CASE SUB-ASSEMBLY (for 2AZ-FE)

- (a) Install the air cleaner case (see page [EM-105](#)).

HINT:

Refer to the procedures from the installation of the air cleaner case up until the installation of the purge VSV.

10. INSTALL AIR CLEANER CASE (for 2GR-FE)

- (a) Install the air cleaner case (see page [EM-31](#)).

HINT:

Refer to the procedures from the installation of the air cleaner case up until the installation of the air cleaner cap sub-assembly.

11. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

12. CHECK ABS AND TRACTION ACTUATOR ASSEMBLY WITH INTELLIGENT TESTER

- (a) Check the ABS and traction actuator with the intelligent tester (see page [BC-180](#)).